

REMARKS

Claims 37, 38, 44 and 46 are amended; claims 1-36 and 45 are cancelled; and new claims 47-49 are added. Claims 37-44 and 46-49 are pending in the application.

The pending claims stand rejected as being unpatentable over Brown (U.S. Patent No. 5,418,180) in view of Haukka (U.S. Patent application 2002/0115252). Applicant has amended independent claim 37 (from which the remaining claims depend), and believes that such amendments place all of the pending claims in condition for allowance.

Amended claim 37 recites a method of forming a capacitor which includes forming titanium nitride over a substrate, densifying the titanium nitride by exposure to one or both of an oxidizing atmosphere and a nitridizing atmosphere, forming a layer comprising aluminum oxide over and physically against the densified titanium nitride, forming a high-k dielectric material over the layer comprising aluminum oxide, and forming a second capacitor electrode over the high-k dielectric material.

The amendment to claim 37 introduces the limitation that the titanium nitride is densified by exposure to one or both of an oxidizing atmosphere and a nitridizing atmosphere, as well as the limitation that the layer comprising aluminum oxide is formed over and physically against the densified titanium nitride. The amendments to claim 37 are supported by the originally-filed application at, for example, page 12, paragraph 0037, (describing the densification of the titanium nitride), and figure 1 (showing an aluminum-containing layer 36 formed physically against a densified titanium nitride layer 26). Accordingly, the amendments to claim 37 do not comprise "new matter".

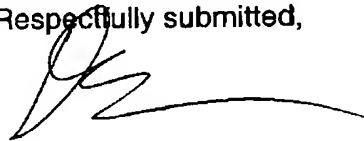
Amended claim 37 is allowable over the cited references for at least the reason that the references do not suggest or disclose the claim 37 recited formation of a layer comprising aluminum oxide over and physically against the recited densified titanium nitride. Specifically, such concept is not shown or disclosed in either of the cited references, and accordingly it is inconceivable that such limitation can be considered to be taught by the combination of the cited references. Applicant therefore requests formal allowance of claim 37 in the Examiner's next action.

Claims 38-44 and 46 depend from claim 37 and are therefore allowable for at least the reasons discussed above regarding claim 37. Claims 38, 44 and 46 are amended so that the recited subject matter of the claims has appropriate antecedent basis to amended claim 37.

New claims 47-49 also depend from claim 37, and are therefore allowable for at least the reasons discussed above regarding claim 37. Claims 47-49 recite subject matter described in the originally-filed application at, for example, paragraph 0037 and paragraph 0038, and therefore do not comprise "new matter".

Claims 37-44 and 46-49 are allowable for the reasons discussed above, and Applicant therefore requests formal allowance of such claims in the Examiner's next action.

Respectfully submitted,



Dated: April 26, 2005

By: _____

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